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Hybrid Warfare and Nuclear Weapons

It would be unusual to examine the nature of hybrid warfare and omit consideration of the potential role, if any, that nuclear weapons might play in this form of conflict. Nuclear weapons, both traditional and the imagined, is a constant feature of the global security order and as such could have a role to play in any current or future conflict, should a protagonist possess them. The important point, however, is to try and avoid far reaching speculation and keep to the realms of what is known about nuclear weapons, the context surrounding their use and if they would make sense, if deployed in a hybrid context. This chapter will therefore seek to explore what nuclear weapons might bring to a hybrid conflict, examining what role they could play, if either used or threatened to be used, and to consider what additional factors, if any might shed light on how effective their deployment might be. It recognises that much of this type of thinking is fraught with uncertainty and hesitancy due to a lack of empirical evidence and a lack of clear definition. However, as this chapter will reveal, there are issues worth examining and questioning even if the outcome of our investigation remains barren and abstract.

Traditional nuclear security environment

It is often forgotten that nuclear weapons have featured prominently in classical military thinking since the final days of World War II. The development of atomic and then thermonuclear weapons has spawned a virtual industry in a certain strand of strategic studies that has not lost any of its intensity with the passage of time. Traditional calculations concerning the use of nuclear weaponry such as deterrence, first strike, counter force and survivability are as live today as they were under the gaze and calculations of nuclear theorists such as Bernard Brodie, Herman Kahn or Henry Kissinger. There will always, it seems, be room for the Rand Corporations, the RUSIs and SIPRIs and the Military Balances of

[1] Centre for the Study of New Security Challenges.

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the world.[2] Most commentators today would still agree that by and large, nuclear weapons remain a symbol of massive military firepower. The United States and Russia remain 'primus inter pares' so to speak but even middle ranking nuclear powers, such as the U.K., France and to a lesser extent, China, possess nuclear capabilities quite capable of wreaking havoc on any enemy should they choose to do so.[3] Familiar also is the traditional 'triad' of capabilities, based on land, sea and air delivery systems. Over the years, technological improvements in areas such as sea-launched ballistic capabilities or enhanced guidance systems or payload or propulsion features have ensured that nuclear capabilities do not remain static. Numbers might be reduced through arms control and negotiation but the issue of firepower, flexibility and prestige continues to retain a currency even after seventy or so years of development and deployment.[4] Of course it would be pointless to maintain and develop such forces at no little cost to a nation's wealth if no thought was given to the use of such capabilities. Therefore, it should not be a surprise that the integration of nuclear forces into general calculations of modern conflict remains a major feature of those government and militaries that possess them. Indeed, it is unsurprising that the strategic thinking about the potential utility of nuclear weapons remains unabated in serious strategic planning circles and their associated academic 'Think Tanks'.[5] Part of such discussions is very much of a technical nature. For example, the potential of hypersonic delivery systems that seemingly can penetrate even the most sophisticated missile defence system has been highlighted as a result of the current conflict in Ukraine. Similar technical discussions have also taken place regarding new forms of delivery platforms, missile guidance systems and vitally, control.[6] However, the other part of nuclear discourse focuses on another traditional aspect of nuclear weapons and arguably more akin to asymmetrical conflict, which itself is seen as a likely element of hybrid conflict – the rise of the nuclear outlier or so-called rogue state.[7] As much as one could argue that traditional superpower nuclear policies have been more or less

[2] The USA and the U.K. have long-established security studies NGOs focusing on the development and use of nuclear weapons – which is a reflection of their early development in these countries.

[3] See the IISS annual Military Balance audit.

[4] Cirincione 2020.

[5] Cirincione 2020.

[6] See booth SIPRI and Janes Defence Group for a number of excellent discussions on nuclear weapon technologies.

[7] Venter 2018.

stable since the days of détente, highlighting the significant strides in nuclear disarmament, there are isolated states in the international order that have a different perspective on the so-called nuclear 'balance of power'. Regional powers from about the 1970s began to recognise the potential of nuclear capabilities as a factor in their own security calculations and strove – often in the face of stiff opposition by the traditional powers – to acquire such weapons. Recognising the significant technical and financial challenges to developing such weapon systems, these states often sought to acquire the precursors to weaponry through illegal and dubious methods in the face of regulatory prohibition.[8] One could argue that such policies on the part of states like India, Pakistan and eventually Libya, Iraq, Iran and Syria to acquire such capabilities could be labelled 'hybrid'. The potential use of such weaponry, were it to be either acquired or developed, would need to be seen in the light of hybrid as the arsenals were likely to be sufficient to threaten or contribute to the destruction of a neighbouring rival but was never seriously going to deter a modern nuclear-armed enemy should they decide to engage in brinkmanship. However, you can clearly see, however, that the potential use of such limited capabilities could only make sense in a form of hybrid engagement if it were to have any chance to succeed. Unfortunately, international efforts to dampen such nuclear weapon proliferation has clearly failed and as such, the only realistic response seems to be the use of force to prevent the development of a 'rogue' nuclear capability or accommodation, including possibly deterrence. Economic sanctions, trade and financial, seem to make little impression on a determined state actor seeking to acquire nuclear weapons and it is unsurprising that military planners do consider scenarios where rogue states do possess some rudimentary form of nuclear weapon and pursue a range of policies under the real or imagined security umbrella that they think nuclear weapons offer.[9] However, if such scenarios do suggest the potential for nuclear weapons to form a component of a hybrid strategy, one can equally introduce another more contemporary factor into the equation – the non-state actor seeking or possessing such a capability. Nuclear terrorism is generally recognised as a potential element in various forms of hybrid conflict, either as a stand-alone factor or a proxy for a traditional state actor. This fear has been greatly accentuated by the events of 9/11 and it is fair to say that nuclear

[8] Albright 2010.
[9] Venter 2018.

terrorists armed with so-called 'dirty bombs' have been a mainstay of counter-terrorist risk assessments and exercises for many years. The utility and benefit of the possession of such weapons that accrues for the terrorist is arguably not that different from the benefits assumed by so-called rogue states, including self-empowerment, strength and power, a possible deterrent and leverage through fear and blackmail. It also appeals to ego but in reality, it often reflects fear. The activities of the nuclear terrorist, as far as one can judge, is also pretty similar to those of the rogue state; deceit, concealment, acquisition and barter. Theft will also come in handy but by and large this is not an overwhelmingly important factor and certainly less so than having an 'insider' accomplice embedded in the acquisition process.[10] Of course it is problematic to speculate overly about whether or not a nuclear-armed terrorist group would value playing a subordinate role in a larger hybrid conflict directed by the aims and objectives of others. However, should the terrorist group be a 'proxy' for a state or even a body of state posing as a 'terrorist', the calculations of risk are possibly not far from each other. Certainly, expecting a traditional terrorist group to think on classical strategic conflict lines – for example about using their limited nuclear capability as a deterrent or a rudimentary form of 'extended deterrence' is unlikely but not far fetched, depending on the cause and perspective of the group. It is unlikely that such calculations would detain a 'lone wolf' actor. It would give a false impression of the nuclear security world if one were to ignore the global efforts to prevent or dampen the desire by some states or non-state actors to acquire nuclear weaponry. International efforts to prevent such proliferation have been with us for years, a reflection perhaps that more traditional, diplomatic efforts to secure and contain the growth of nuclear arsenals has been only partly successful and that there exists a flourishing 'black market' or 'proliferation pathway' which sustains efforts to circumvent these controls.[11] At the top of this apex of countermeasures and limitations are – as already mentioned – a network of arms control agreements. In addition to these, however, attempts were made to restrict access to those materials and expertise that would facilitate a clandestine nuclear weapons programme. Arguably, it has been the international community's willingness to prevent such activities that has led, in extremis to the use of

[10] Bunn–Sagan 2017.

[11] The concept of the 'Proliferation Pathway' is often used in government counter proliferation agencies to describe the range of activities undertaken to ensure the smuggling of goods or weapons to support an illegal WMD development programme.

military force to thwart or stall a so-called 'rogue state's' weapon development programme. Notable examples of such intervention in recent times have included the Stuxnet cyber operation against an Iranian nuclear facility, the invasion of Iraq and of course the Abdul Qadeer Khan case. Yet it is this subterranean counter proliferation conflict that could easily lend itself to being or becoming an element of a hybrid conflict. It is frequently difficult to appreciate how an export control violation or the illegal sale of dual use technologies could be a vital component of an aggressive proliferation operation. Similarly, the sophisticated dispersal and concealment of large sums of money in and out of the global financial system, which is necessary to underpin large-scale – usually state-sponsored – proliferation is really akin to 'white collar crime' and quite clearly a hybrid activity of sorts.[12] Whilst trying to address such 'strategic' forms of proliferation, the international community must also strive to stifle and prevent lower level activities most commonly associated with gaining access to radio-active materials – much of it from unlikely sources such as medical facilities or industry – and which could be associated with efforts to create a radiological dispersal device, often touted as the terrorists' weapon of desire. Such efforts to prevent this theft or transport of illegal and hazardous materials – like the efforts at the global and regional level – depends on a combination of reactive and static surveillance and more proactive intelligence-led surveillance and interdiction. Often the most appropriate form of prevention lies in the overlay of several types of activity, which ultimately draw their mandate and method from international frameworks such as the UN 1540 arrangement or the Proliferation Security Initiative (PSI).[13] However, despite the possible similarities between the efforts of rogue states or terrorist groups to acquire a nuclear weapon capability, one should beware of reading too much into this. Proliferation networks – absent outright theft of a nuclear weapon – can operate clandestinely for a number of years but still fail to deliver the sought-after end result. This is most likely to be a lack of certainty that would complicate the more complex choreography of planning that would be necessary in developing a hybrid strategy.[14] What this does suggest, however, is that to effectively discern the role of nuclear weapons in a hybrid context requires a significant investment in early warning architecture, which can provide solid and reliable indicators and warnings.

[12] Zetter 2015.
[13] PSI – Proliferation Security Initiative s. a.
[14] PSI – Proliferation Security Initiative s. a.

Beyond traditional thinking

Despite seeming popular apathy and lack of thinking about nuclear weapons today, it still seems fair to say that there is an absence of sophisticated speculation as to where nuclear weapons might fit into hybrid conflict. Methods of procurement or development aside, it has been difficult to perceive a genuine debate on the role of such weapons on hybrid strategies, although some commentators believe that this is due to change as a result of the current conflict in Ukraine. Yet, this apparent lack of debate is more likely to be the result of knowing where best to position new thinking within the traditional nuclear strategy realm. Look hard enough and you will actually see some fascinating considerations of new thinking about the potential impact of nuclear weapons, although the focus rarely if ever mirrors current forms of analysis. For example, the loss of command and control of nuclear weapons through the hacking of codes and communications architecture. Such a scenario of course is not unique to hybrid conflict if at all but it does bring into focus some new forms of risk and generates new thinking on how best to address the problem. Cyber threats and challenges is a massive security subject and within it, the protection of critical systems features large. Arguably, no military system is more decisive than nuclear arms control, especially on the issue of release. Over the last few years, however, it is possible to speculate, based on an extrapolation of data arising from global cyberattacks, that national control systems might be vulnerable. It is a fact that the private sector is more likely to attract the most creative and gifted coders to commerce than they are to be attracted by government service. This imbalance of talent could suggest that the balance of capability – if used maliciously – might lie with a determined or financially empowered enemy.[15] Should the most critical of communication and authorisation codes relating to nuclear weapon systems be compromised, one could be looking at a factor that might easily fit into a concept of hybrid conflict. Issues such as strategic stability or predictability could be significantly degraded and reading intentions could become more challenging. Indeed, even the short-term disarming or hindering of a state's nuclear alert posture is clearly advantageous to a participant in a crisis whereby nuclear intent might be crucial.[16] An equally disturbing scenario might be the loss of control of an active weapon and facilitating its release onto

[15] Unal–Afina 2020.
[16] Unal–Afina 2020.

its owner or its owner's allies or even onto its owner's enemy. The deliberate release of a nuclear missile onto a densely packed civilian population centre would also have a similar effect. The key question is purpose. To what end would such a scenario make sense? Tragically, such a response is not too difficult to imagine, especially in a context where concealment, clandestine movement, deniability and fake news are prominent features of asymmetrical challenge.[17] Given that imagination is often at a premium in the consideration of forms of activity that might constitute hybrid conflict, it would be foolish to ignore the lessons of recent history in suggesting that the use of specific nuclear facilities could quite easily, if they were to fall out of the control of their operators, become weapons in their own right. There is perhaps no better example in recent years than the hijack and use of civilian aircraft as 'missiles' smashing into civilian targets.[18] It would be inappropriate, however, to assume that such acts, whether it was the attack on the World Trade Center or a future assault to take over control of a nuclear facility would necessarily envisage the callous disregard of civilian casualties. Depending on the author of such an act, it might be the threat of further escalatory acts, which seek to influence an opponent's behaviour that is the purpose of the exploitation of nuclear power and not any particular desire to generate a nuclear explosion. It also has to be noted that the role that cyber weapons might play could be crucial, which suggests that cyber weapon policy is equally as potent in any hybrid conflict. The prime reason why this potential utilisation of a nuclear facility might be attractive to a state engaging in hybrid conflict is obvious. Suddenly, from a position of no nuclear capability, there lies the promise of activating powerful equivalents already prepositioned around the world. Clearly any strategy based on exploiting civilian nuclear facilities has significant limitations. These 'weapons' – if they can be called that – are not yours, by and large not familiar to you, require sophisticated handling, cannot be directed and remain situational. This might lead one to speculate that the aim of turning a nuclear plant into a weapon might only work or be carried out successfully in fairly limited circumstances and that should it be successfully achieved, might suggest a sophisticated and technical opponent who sees the strategic value in blackmail.[19] A repetitive feature of discussions on hybrid

[17] The 9/11 attacks demonstrated a capacity to 'weaponise' traditional forms of technology to support forms of hybrid terrorist attacks.

[18] Clark 2012.

[19] Allison 2006.

conflict is the acute consideration given to the use of some form of rudimentary weapon of mass destruction. Nuclear or radiological material of course features highly by dint of the fact that significant volumes of material are present in a world supported by nuclear energy and aided in key societal sectors, such as medical or engineering, with radioactive materials. In short, it is a short thought from materials available to making some form of improvised explosive device or better still, radiological dispersal device.[20] It is fair to point out that no such terrorist or state sponsored activity has been undertaken using such methods. One can draw the preliminary conclusions that for whatever reason, it has been too difficult to develop such a weapon or there is no intent to do so. Perhaps the return on investment for the perpetrator is insufficiently rewarding. However, in a war situation or major conflict, especially a hybrid conflict, would such calculations remain valid? Undoubtedly the sheer volume of such material would lend itself to the potential development of a small number of devices, so-called 'dirty bombs'. One has the technical expertise to craft such weapons. Yet, in terms of sheer destructive power, the effect is more likely to be less than a similar device using conventional explosive such as Semtex or unconventional mixtures such as the use of fertiliser. If it is appreciated that the destructiveness of such a device is limited, how else might such a weapon become useful? More likely, the exploitation of small quantities of nuclear or radioactive material lies in the shock and fear value that is likely to arise from their use. The typical terrorist generation of fear and panic, usually aimed at generating a certain form of response by the authorities is a valuable and proven weapon and arguably it is the fear factor of the willingness to use this form of nuclear weapon that might credibly add credibility to a hybrid strategy. Arguably the least speculated dimension of nuclear policy in a hybrid contest could be the deployment and eventual use of forms of nuclear weapons in space. Such weapons might figure in forms of warfare ranging from support in destroying competing space assets such as satellites to possibly being launched against targets on earth. Admittedly, much of this seems more akin to science fiction literature than staid global warfare planning but in reality, the decision by major military powers to create Space Commands is a recognition that space-based operations, including in support of nuclear command and control operations, anti-satellite operations and possibly the deployment of some form of nuclear weapon in space cannot be ignored. What could be more hybrid that a strategy that straddles terrestrial and

[20] Allison 2006.

space operational theatres? One would anticipate that only significant military powers will occupy this space but the advent of aggressive cyber operations and the potential small state exploitation of civilian satellites, particularly commercial micro satellites have the potential to impact how one might actually use nuclear weapons in the future. This is an element of potential hybrid strategy that clearly demands further 'horizon scanning'.

Nuclear weapons and recent conflict

The current conflict in Ukraine – arguably an example of hybrid warfare – has been replete with examples of the nuclear question. Perhaps the earliest manifestations of the nuclear dimension arose from comments from Moscow about its possession of a considerable nuclear arsenal, possibly as a way to warn off too direct western or NATO intervention but also as a timely reminder to Ukraine that this was an unequal context.[21] Such sabre rattling was noted but on reflection, it seems to have done little positive for Moscow's position. NATO certainly played down these reminders by reminding Moscow that it also possessed a massive and credible nuclear arsenal. Demonstrations of nuclear strength by Russia continue, ranging from the tests of new missile technology to sea-launched missile exercises. Added to this were the continuing flying of nuclear capable bombers along NATO's borders and the testing of the state of readiness of Russia's nuclear forces.[22] One might convincingly argue that this represents Russian nuclear strategic thinking and they would not be wrong. Nuclear forces are a vital and integral element of Russia's military capability and their thinking about engaging in conflict. Frankly, whether the warfare is classical or hybrid is neither here nor there. Other commentators, however, have highlighted the fact that this is not an engagement involving two nuclear powers due to the unilateral decision by Ukraine – under international diplomatic agreement – to give up its nuclear arsenal. With hindsight, was that a wise move or does the current situation lend itself to suggestions that possessing a nuclear weapon might have prevented the outbreak of hostilities in the first place.[23] Indeed, these deliberations about nuclear policy and in particular Russian nuclear policy have

[21] Cournoyer–Messmer 2022.
[22] Cournoyer–Messmer 2022.
[23] Much of this type of discussion is a mainstay of nuclear deterrence theory.

begun to broach the subject of Russian nuclear doctrine's acknowledgement that a limited tactical nuclear strike might be valuable in setting conditions conducive to ending a military engagement of the sort we see in Ukraine. One could argue that such a development might only be feasible under a hybrid warfare scenario and could not really be contemplated in a classical engagement between two nuclear-armed parties. However, like numerous conflicts across time, space and distance, it is events on the ground that often dictate the tempo and flavour of the conflict and in Ukraine, the Russian assaults and seizure of two critical nuclear power plants and the secondary action surrounding it has sparked another crisis. In engaging in military activity, including the shelling of targets in the vicinity of such nuclear facilities, the risk of some form of accident is increasing daily. In Chernobyl and Zaporizhzhia, Russian forces had occupied – albeit temporarily in the case of Chernobyl – the physical sites and crucially, seized operational control from the operators. In doing so, it exposed the systems to external interference, degraded the capabilities of the operational staff and more worryingly, disrupted traditional communication systems.[24]

Assessing the risk

Knowledge and insight into the operations of a vital system and the equipment and materials associated with it are out of regulatory control. What this might mean is that vital and sensitive knowledge of how to operate or disable such systems could be open to abuse or deliberately or inadvertently transmitted to people of concern. Furthermore, in such circumstances as it pertains at the moment in Ukraine around the Zaporizhzhia plant, there is unlikely to be certainty that all critical equipment or nuclear materials can be accounted for.[25] Why might this be relevant to hybrid conflict? A number of possible scenarios come to mind, not as certainties but simply to illustrate the potential that unfettered access to such materials afford an imaginative adversary. One such scenario might be the future use of materials to support a 'false flag' operation. For example, a release of nuclear material into the atmosphere adjacent to a nuclear facility

[24] It was the proximity of actual shelling and the subsequent seizure of the Zaporizhzhia nuclear power plant in Ukraine which led to the intervention of the IAEA.

[25] This was an important factor in EU energy security decisions developed in late 2022 and early 2023.

and containing a radioactive signature similar to the facility could lead to its closure and a subsequent disruption to national energy supplies and economic disruption. Another scenario might see the smuggling of materials into the hands of organised crime and from there to a particularly dedicated or wealthy terrorist group. Indeed, radioactive material from a site which had been occupied in time of conflict could also find its way to select proxy groups, the future use of which could be clearly linked to a hybrid conflict agenda.[26] As it stands, the intervention by the International Atomic Energy Agency (IAEA) in Ukraine seems the most obvious route for the nuclear conundrum to be resolved but this cannot be guaranteed nor would it solve all the potential risks associated with Russia's current activities.[27] Nuclear specialists would be the first to admit that despite the apparent stability that nuclear weapons can bring to a balance of power, the history of nuclear strategy clearly indicates that there have been times when the world tottered on the brink of a nuclear clash.[28] The most well-known and pertinent example would be the Cuban Missile Crisis in October 1962, when the U.S. and the Soviet Union confronted each other over the Kremlin's decision to deploy tactical nuclear missiles to the small communist state off the United States. Such a decision was unlikely to stand, given the U.S.'s determination to see the weapons removed. The question most people asked at the time was how to prevent escalation amid crisis management?[29] Diplomacy – much of it secret – did in the end create the conditions for a resolution but as historians have revealed since then, the situation was not only fraught with high-stakes geopolitical gambling but was also frames to an extent by faulty analysis and appreciation of the actual state of play concerning the weapons and tactics themselves. The most disturbing historical revelation was the acknowledgement by the Soviet Union that the local commander on the ground had release authority should the situation escalate and hostilities break out. Since then, other instances of nuclear risk emerged, including at the time of a stand-off in the late 1960s between the Soviet Union and China, the 1973 Yom Kippur War and the infamous systemic error in the Soviet system, in the late 1980s, had the Soviet Nuclear Command almost convinced that the U.S. had launched a surprise nuclear attack on the Soviet Union. On that occasion, human intervention by a Soviet officer overruled

[26] See IAEA s. a.
[27] IAEA s. a.
[28] Plokhy 2022.
[29] Hoffman 2011.

the technical alert system and led to a satisfactory outcome to the crisis. Why are such examples important? The examples above occurred during a period of confrontation that was sensitive to the enormity of the power of nuclear weapons and as such, an arrangement of sorts about both their use and threat of use had been created. Not only was the mantra of 'mutually assured destruction' a sobering thought but the choreography of 'last resort' graduated response clearly signalled that although nuclear weapons were an integral element of national power, they were not really weapons to brandish at the drop of a hat.[30] Hybrid warfare on the other hand, holds out the potential of a more complex, constantly shifting and indeterminate phases between preparation, planning, action, resolution, de-escalation and bluff. Indeed, once set in motion, can one predict with any certainty that events by their nature and location are just that, disparate and unlinked activities or part of a mosaic or jigsaw that will eventually mushroom into a focused act of aggression? In essence, trying to gain early warning of a potential nuclear component to a hybrid strategy is a significant task. It isn't that we lack indicators and warning of threats and in particular, the specific threats of nuclear deployment, threat or attack. It isn't the risk matrix that is likely to be challenged but our ability to see such incidents as part of a sophisticated and multi-level, organic challenge. How do we create such analytic systems but arguably more important, how do we refine our decision-making culture in the face of quite unusual future nuclear risks? That perhaps signals one of the most attractive or frightening aspects of a nuclear empowered hybrid challenge.

Conclusion

As the short review above seeks to demonstrate, nuclear weapons still retain their importance and some would say their centrality in modern military doctrine. There is nothing to suggest that this situation will not persist for many years to come. Therefore, it would be a mistake not to consider that those states that have nuclear weapons have considered their deployment and even possible use in a range of eventualities. Some of these eventualities would have included speculation and discussion on the contours of hybrid conflict. What then might be the features of a hybrid conflict that might lend itself to a nuclear option? This can only be answered properly if we try and distinguish between those

[30] Hoffman 2011.

with nuclear weapons and those without. It might appear a fallacious distinction but in terms of scoping out options, it is not unreasonable. For a nuclear power, therefore, using weapons in a hybrid conflict will always be an option, especially when one takes into consideration real or likely adversaries. Options for using or threatening to use such weapons could depend on prior planning or simply reflect strategic considerations during a campaign. On balance, perhaps the most advantageous way for a nuclear power to behave is to threaten their use, thereby creating strategic ambiguity, perhaps encouraging confusion or simply trying to simply frighten an enemy into submission or acting in a certain way. One way or another, possessing nuclear weapons offers options and flexibility that a non-nuclear adversary cannot match. Such a disadvantage might be the catalyst required by a protagonist to either acquire a nuclear capability through a dedicated weapons programme or to set out to structure a tactical capability based on low level acquisition or theft. This development time would largely depend on circumstances but again the contour of potential exploitation of a rudimentary capability lies in the ability to either threaten to use such a weapon in order to influence events or use it to inflict some form of asymmetrical response. It is hard to see how the damage of a 'dirty bomb' for example could significantly damage a nuclear opponent but it might have a more meaningful impact against another non-nuclear power. At this level of engagement, nuclear weapons in a nominally nuclear free environment could significantly alter the balance of power but again, if the weapon be a simple radiological dispersal device, would it really count for much in a hybrid conflict? Arguably, the most obvious role for a non-traditional nuclear power in a hybrid conflict is to avoid conflict unless the threat is existential. However, should deterrence fail, threatening to use a nuclear capability previously undeclared and not described in any detail would create that sense of ambiguity that might be useful in a hybrid setting. Should it prove necessary to follow through on the threat and absent anything other than an improvised weapon and delivery platform, the protagonist would in all likelihood be advised to create fear and panic or any other destabilisation action that could possibly influence the course of an aggressor. That, frankly, is a significant gamble. A much wider consideration might be the notion that any state that has serious regional intentions would seek to acquire a nuclear capability of some sort, preferably one that looks and feels like a traditional weapon system and which could fit seamlessly into a hybrid strategy. If this becomes likely and there are few good reasons why it should not then western strategists might have to invest greater effort into planning the management of

a hybrid conflict, which could include nuclear weapons. Such considerations might become the staple fare of war college studies and strategy symposia but it would also force a review of hybrid countermeasures and the framing of new risk analysis paradigms. By implication, this might suggest that in the future, nuclear proliferation might become an underlying feature of hybrid posture and might require the international community to recalibrate its global counter proliferation posture. Not only would materials and processes associated with nuclear proliferation become objects of enhanced control and surveillance but so also would the spectrum of emergent technologies. Finally, hybrid conflict and its unpredictable nature might force greater efforts to be undertaken by determined actors to use cyber means to disrupt the nuclear capabilities and operations of a nuclear armed opponent. Hacking and cyber disruption operations are likely to increase in intensity and unfortunately it will not take too many hijackings of a nuclear weapon and its subsequent detonation to significantly alter some of the strategic calculus of nuclear powers. A careful and prudent surveillance of technical developments in fields such as artificial intelligence and quantum computing might throw light on the future vulnerability of nuclear weapon systems and their associated command and control systems. The fear will be that under hybrid conditions, launch authority is devolved to smart intelligent machines in order to hasten and reinforce responses from external interference and reaction times that are counted in seconds. Nuclear weapons in a future hybrid warfare scenario might be difficult to predict but there is no doubt that they would not reduce concerns but possibly complicate what has been hitherto a fairly stable arrangement as far as modern conflict is concerned. If that is the case, then perhaps we have to explore more deeply what a hybrid concept of modern conflict might develop into, in the not too distant future.

Questions

1. Describe the benefits of incorporating nuclear weapons into a national hybrid warfare strategy and what the potential drawbacks might be of this approach?
2. How might cyber capabilities used under a hybrid conflict scenario influence the behaviour of a nuclear state?
3. Explain how stolen or illegally procured radioactive material could be used in a hybrid conflict situation?

4. How effective could a 'false flag' nuclear release event be in influencing the outset of a hybrid warfare campaign?
5. Do concepts of hybrid warfare and the nuclear dimension encourage proliferation? Discuss.

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